REMARKS

Reconsideration is respectfully requested in light of the amendments above and the remarks that follow.

In the specification, paragraph [0068] has been amended to include sequence identifier numbers.

Claims 1-3, 6-8, 11-12, 15-17, 19-21, 23-26, and 28 are pending. Claims 4-5, 9-10, 18, 22, 27, and 29-41 are withdrawn. Claims 13-14 have been canceled. Claims 1 and 29 have been amended. Support for amended claims 1 and 29 is found, for example, in paragraphs [0003], [0035], [0037]-[0038], and [0052]-[0053] of the specification as filed.

On pages 2-3 of the Office Action, the Examiner states that the disclosure is objected to, because sequence identifiers, preceded by SEQ. ID. NO., are missing from paragraph [0069]. Applicant understands that the Examiner intended to refer to paragraph [0068], which includes nucleotide sequences, rather than paragraph [0069], which does not include sequences. Applicant has amended paragraph [0068] to include sequence identifiers.

On page 9 of the Office Action, the Examiner states that should claims 1-2 be found allowable, claims 13-14 will be objected to as being a substantial duplicate. Applicant has canceled claims 13-14, rendering such an objection moot.

Claims 1-3, 6-8, 11-17, 19-21, 23-26, and 28 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Paralkar et al., U.S. Publication No. 20040176423 (Date of Publication September 9, 2004) (herein, " Paralkar"), in view of Parish et al., (1995, Lipids, pp. 247-251) (herein, "Parish"), and further in view of Wang et al. (Clinical Orthopaedics and Related Research, 2000, 370: 295-310) (herein, "Wang"). Applicant respectfully traverses.

Claims 13-14 have been canceled, rendering their rejection moot.

On pages 3-6 of the Office Action, the Examiner indicates that Paralkar teaches the induction of osteoblastic differentiation by treatment of cells with statins. The Examiner indicates that Paralkar teaches that statins inhibit HMG-CoA reductase. Although some of the text of Paralkar confounds statins with the broader class of HMG-CoA reductase inhibitors, in

fact, the only specific HMG-CoA reductase inhibitors allegedly useful in promoting bone growth called out by Paralkar are statins (see, e.g., paragraph [0011] on page 1, paragraphs [0034]-[0035] on page 2, paragraphs [0041] and [0050]-[0053] on page 3, and paragraphs [0080]-[0081] on page 5). Thus, that inhibition of HMG-CoA reductase and osteoblastic differentiation are coincident effects of the administration of statins does not demonstrate that the inhibition of HMG-CoA reductase causes osteoblastic differentiation or that the administration of a non-statin HMG-CoA reductase inhibitor will induce osteoblastic differentiation. That is, a correlation between the phenomenon of HMG-CoA reductase inhibition and osteoblastic differentiation does not demonstrate causation of osteoblastic differentiation by HMG-CoA reductase inhibition.

The Examiner concedes that Paralkar does not teach osteoblastic differentiation with one oxysterol.

The Examiner indicates that Parish teaches oxysterols as inhibiting HMG-CoA reductase. However, Parish does not mention any effect of an oxysterol on bone formation. Because Paralkar does not prove that HMG-CoA reductase inhibition induces bone formation, one of ordinary skill in the art would not be motivated to administer an oxysterol to induce osteoblastic differentiation, and would have no reasonable expectation of success in inducing osteoblastic differentiation by administering an oxysterol.

The Examiner indicates that Wang teaches that treatment with statins inhibit adipocyte differentiation and induce osteoblastic differentiation of mouse mesenchymal stem cells. However, the Examiner has not shown that HMG-CoA reductase inhibition induces osteoblastic or inhibits adipocyte differentiation. Therefore, one of ordinary skill in the art would not be motivated to administer an oxysterol to induce osteoblastic or inhibit adipocyte differentiation, and would have no reasonable expectation of success in inducing osteoblastic or inhibiting adipocyte differentiation by administering an oxysterol.

Because one of ordinary skill in the art would not be motivated to administer an oxysterol, let alone a combination of oxysterols, to induce osteoblastic or inhibit adipocyte differentiation, or have a reasonable expectation of success in doing so, the Examiner has not shown that claim 1 is *prima facie* obvious over any combination of Paralkar, Parish, and Wang. Therefore, Applicant submits that independent claim 1 is patentable, and claims 2-3 dependent from claim 1 are patentable. Applying similar reasoning, Applicant further submits that

independent claims 15, 19, and 24 are patentable, and claims 16-17, 20-23, 25-26, and 28 dependent from these are patentable.

Under Applicant's argument above, the Examiner's indication that Paralkar and Wang teach treating cells with statins to induce the expression of osteoblastic differentiation markers would not lead one of ordinary skill in the art to conclude that treating cells with an oxysterol would induce the cells to express a level of a biological marker of osteoblastic differentiation which is greater than the level of the biological marker in untreated cells. Because one of ordinary skill in the art would not be motivated to administer an oxysterol to stimulate expression of a marker of osteoblastic differentiation, or have a reasonable expectation of success in doing so, the Examiner has not shown that claim 6 is *prima facie* obvious over any combination of Paralkar, Parish, and Wang. Therefore, Applicant submits that independent claim 6 is patentable, and claims 7-8 and 11-12 dependent from claim 6 are patentable.

Applicant respectfully requests that the rejection under 35 U.S.C. § 103(a) of claims 1-3, 6-8, 11-12, 15-17, 19-21, 23-26, and 28 be withdrawn.

Claims 1-3, 6-8, 11-17, 19-21, 23-26, and 28 stand provisionally rejected on the ground of non-statutory obviousness-type double patenting as allegedly being unpatentable over claims 1-3, 5-9, 11-15, 17-20, 22-25, and 27-30 of co-pending Application No. 10/569,994 in view of Paralkar et al. (US Patent Application Publication No. 2004/0176423).

Applicant, without acquiescing to any rejection, respectfully requests that the provisional double-patenting rejection as it applies to Application No.10/569,994 in view of Paralkar et al., be held in abeyance until allowance of the instant application. While in no way admitting that the present claims are obvious over or anticipated by the claims of this application, upon allowance of the claims of the instant application, Applicant will consider filing a terminal disclaimer in the instant application.

Claims 1-3, 6-8, 11-17, 19-21, 23-26, and 28 stand provisionally rejected on the ground of non-statutory obviousness-type double patenting as allegedly being unpatentable over claims 1-11 of co-pending Application No. 11/918,089 and over claims 1-9 and 15 of co-pending Application No. 11/991,322.

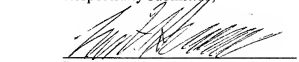
Applicant, without acquiescing to any rejection, respectfully requests that the provisional double-patenting rejection as it applies to Application No. 11/918,089 and to Application No. 11/991,322 be held in abeyance until allowance of the instant application. While in no way admitting that the present claims are obvious over or anticipated by the claims of this application, upon allowance of the claims of the instant application, Applicant will consider filing a terminal disclaimer in the instant application.

Applicants maintain that, for the reasons given above, all pending claims not withdrawn, claims 1-3, 6-8, 11-12, 15-17, 19-21, 23-26, and 28, are patentable and that, as such, the present application is in condition for allowance.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is hereby invited to telephone the undersigned at the number provided.

Applicants respectfully request that a Notice of Allowance of all pending claims not withdrawn, claims 1-3, 6-8, 11-12, 15-17, 19-21, 23-26, and 28, be timely issued in this case.

Respectfully submitted,



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Lars H. Genieser, Ph.D.
Registration No. 46,722
VENABLE LLP
P.O. Box 34385
Washington, D.C. 20043-9998
Telephone: (202) 344-4000
Telefax: (202) 344-8300

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